Pharmaceutical Chemistry Journal 2014 vol.48 N8, pages 537-542

Amperometric Detection of Allopurinol in Flow-Injection Analysis on Electrodes Modified by Carbon Nanotubes and Mixed-Valence Ruthenium and Iridium Oxides

Shaidarova L., Chelnokova I., Makhmutova G., Gedmina A., Budnikov G.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2014, Springer Science+Business Media New York. Mixed-valence oxides of ruthenium (RuOx) and iridium (IrOx) and a composite based on them (IrOx—RuOx) exhibited catalytic activity for allopurinol oxidation when electrodeposited on the surfaces of unmodified glassy-carbon electrodes and those modified with functionalized single-walled carbon nanotubes (SWCNT). The greatest catalytic effect was observed on the electrode modified with composite IrOx—RuOx—SWCNT. A flow-injection method for amperometric detection of allopurinol at the modified electrode was developed. The analytical signal was linearly dependent on allopurinol concentration in the range 1×10^{-6} – 5×10^{-3} M.

http://dx.doi.org/10.1007/s11094-014-1146-z

Keywords

chemically modified electrodes, electrochemical oxidation of allopurinol, flow-injection analysis, mixed-valence Ru and Ir oxides